

# Mughal Gardens Were Evapotranspiration Systems Disguised as Beauty

*Water channels, raised beds, and tree canopies were not decoration. They were engineering.*

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## At a Glance

Mughal gardens in Delhi, Agra, and Jaipur maintained thermal comfort through water features, dense vegetation, and airflow design. Occupants in those gardens felt cool in 42°C heat. Modern offices at 22°C feel hot. Why? Wrong kind of cooling. [1]

## Summary

Mughal gardens (16th-18th centuries) in Delhi, Agra, and Jaipur deployed five cooling mechanisms simultaneously: (1) Water features (channels, tanks, fountains) providing evaporative cooling and visual/acoustic biophilia. (2) Dense vegetation (shade trees, fruit groves) intercepting solar radiation and transpiring water. (3) Masonry and stone walls storing and releasing thermal mass. (4) Airflow design (garden layout encouraging convection). (5) Fountains providing cooling through spray evaporation and mist generation. [1]

Research on thermal comfort in historical Mughal gardens (using occupant accounts and archaeological surveys) shows that visitors in gardens felt comfortable despite ambient air temperatures of 38 to 42°C. How? The garden microclimate was 5 to 8 degrees Celsius cooler than surrounding city streets, achieved through shade, vegetation, and water feature evaporation. Occupants adapted to heat but remained comfortable through these mechanisms. [2]

Modern office buildings achieve lower air temperatures (20 to 22°C) but create occupant thermal discomfort because the mechanism is forced cold, not adaptive comfort. Cold HVAC shocks the system. Mughal gardens used evaporative cooling and shade, allowing occupants to acclimate. Cold is rejected by the body. Shade and evaporation are embraced. [3]

The phrase sensible by nature captures this: humans have always known heat and the mechanisms to live with it. We do not need to eliminate heat through mechanical force. We need to manage heat through shade, air movement, water, and plants. [4]

Biothermal Microconditioning implements Mughal garden principles in modern offices. Areca palm clusters provide shade and evapotranspiration. Terrapods hold water for thermal mass and plant irrigation. AI monitoring ensures the system operates continuously, like a garden, not intermittently like a thermostat. Occupants experience adaptive cooling, not forced cold. Easy Retrofit. One day deployment. Sensible by nature. The garden wisdom returns to the office. [5]